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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/581,165	06/13/2000	KIYOAKI MURAI	192906US2PC	9973
22850	7590	03/17/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EBRAHIMI DEHKORDY, SAEID	
			ART UNIT	PAPER NUMBER
			2626	

DATE MAILED: 03/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/581,165

Applicant(s)

MURAI, KIYOAKI

Examiner

Saeid Ebrahimi-dehKordy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6-9,12-17 is/are rejected.
- 7) ☒ Claim(s) 5,10 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3,4,5,6</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,12-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Liang (U.S. patent 5,786,908)

Regarding claim 1 and 12 Liang discloses: A data converter that converts color image data input from a computer into a specific data form expressible with ink provided in a printing apparatus by referring to a preset conversion table and outputs the converted image data (please note Fig.1 item 11, column 10 lines 52-67 and column 11 lines 1-20) said data converter comprising: a storage unit that stores the conversion table in a rewritable manner (please note Fig.8 column 19 lines 11-25) the conversion table being supplied from said computer corresponding to a current printing condition of image in said printing apparatus (please note Fig.2 column 12 lines 11-34) an input unit that receives the color image data output from said computer (please note Fig.1 item 10 column 11 lines 5-11) a conversion unit that refers to the conversion table stored in said storage unit and converts the color image data received by said input unit into the specific data form and an output unit that outputs the converted image data (please note Figs.1&2 column 12 lines 11-67 and column 13 lines 34-67 and column 14 lines 1-62)

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said data converter being constructed as a separate body from said computer (please note Fig.1 item 11 column 11 lines 5-11).

Regarding claim 13 Liang discloses: A data converter in accordance with claim 12, wherein said conversion table storage unit is a rewritable storage unit and comprises a rewrite unit that rewrites the contents of storage in said conversion table storage unit, based on a conversion table transferred from said imaging device (please note column 13 lines 21-67 and column 14 lines 1-65).

Regarding claim 14 Liang discloses: A data converter in accordance with claim 13, said data converter further comprising: a rewrite unit that communicates with a computer, which is constructed as a separate body from said data converter, to receive a conversion table transferred from said computer and rewrites the contents of storage in said conversion table storage unit based on the transferred conversion table (please note Fig.2 item 13 lines 11-19).

Regarding claim 15 Liang discloses: A data converter in accordance with claim 12, said data converter further comprising: a standard storage unit that stores a standard conversion table in advance, wherein said conversion unit refers to the standard conversion table stored in said standard storage unit and converts the color image data when the conversion table corresponding to the current printing condition of image is not present in the diversity of the conversion tables stored in said conversion table storage unit (please note column 13 lines 21-67 and column 14 lines 1-67).

Regarding claim 16 Liang discloses: A printing system comprising:
a data converter in accordance with either one of claims 1 and 12; and

a printing apparatus that receives image data having a specific data form converted by said data converter and prints an image corresponding to the input image data wherein said data converter is constructed integrally with said printing apparatus (please note column 13 lines 58-67).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liang (U.S. patent 5,786,908) in view of Tabata et al (U.S. patent 6,342,950)

Regarding claim 2 Liang does not disclose: A data converter in accordance with claim 1, said data converter further comprising: a decoder unit that receives the conversion table compressed in advance by and supplied from said computer and decodes the compressed conversion table to be expanded in said storage unit, On the other hand Tabata et al disclose: A data converter in accordance with claim 1, said data converter further comprising: a decoder unit that receives the conversion table compressed in advance by and supplied from said computer and decodes the compressed conversion table to be expanded in said storage unit (please note column 15 lines 17-31).

Therefore it would have been obvious to a person of ordinary skill in art at the time of the invention to modify Liang's invention according to the teaching of Tabata et al,

where Tabata et al in the same field of endeavor teach the way the image is compressed and then decoded in order to make the image quality and attributes higher.

Regarding claim 3 and 8 Tabata et al disclose: A data converter in accordance with claim 1, said data converter further comprising: an interpolation unit that interpolates the conversion table supplied from said computer to a predetermined accuracy and expands the interpolated conversion table in said storage unit (please note column 6 lines 45-67 and column 7 lines 1-6).

Regarding claim 4 Liang disclose: A data converter in accordance with claim 1, wherein said input unit receives a current printing condition of image in said printing apparatus, in addition to the color image data, and comprises a unit that, when the input printing condition received by said input unit is not coincident with a printing condition corresponding to the conversion table stored in said storage unit receives another conversion table corresponding to the input printing condition from said computer (please note column 13 lines 35-67 and column 14 lines 1-67).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6-9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liang (U.S. patent 5,786,908) in view of Hudson et al (U.S. patent 6,057,933)

Regarding claim 6 and 17 Liang discloses: A computer that supplies color image data to a data converter (please note Fig.1 column 10 lines 55-67 and column 11 lines 1-10) said data converter converting the color image data into a specific data form expressible with ink provided in a printing apparatus by referring to a preset conversion table and outputting the converted image data (please note Figs.1&2 column 12 lines 11-67 and column 13 lines 34-67 and column 14 lines 1-62) However Neither Liang nor Tabata et al disclose: said computer comprising: an Image data output unit that outputs the color image data to said data converter; a conversion table storage unit that stores a diversity of the conversion tables mapped to a diversity of printing conditions of image; a conversion table selection unit that selects a working conversion table corresponding to a current printing condition of image in said printing apparatus, among the diversity of conversion tables stored in said conversion table storage unit; and a conversion table output unit that outputs the selected conversion table to said data converter, prior to the conversion of the color image data, wherein said computer is constructed as a separate body from said data converter, On the other hand Hudson et al disclose: said computer comprising: an Image data output unit that outputs the color image data to said data converter a conversion table storage unit that stores a diversity of the conversion tables mapped to a diversity of printing conditions of image (please note column 6 lines 16-30) a conversion table selection unit that selects a working conversion table corresponding to a current printing condition of image in said printing apparatus, among the diversity of conversion tables stored in said conversion table storage unit (please note column 7 line 5-21 where the LUTs are located in the computer and outputted) and a conversion

table output unit that outputs the selected conversion table to said data converter, prior to the conversion of the color image data wherein said computer is constructed as a separate body from said data converter (please note column 6 lines 30-55).

Therefore it would have been obvious to a person of ordinary skill in art at the time of the invention to modify Liang and Tabata et al's invention according to the teaching of Hudson et al, Hudson et al in the same field endeavor teach the combination of LUTs being used to modify the end result of the conversion of look up tables in order to make the conversion more accurate.

Regarding claim 7 Hudson et al disclose: A computer in accordance with claim 6, wherein said conversion table storage unit stores the diversity of conversion tables in a compressive manner and said conversion table output unit decodes the compressed conversion table selected by said conversion table selection unit and outputs the decoded conversion table to said data converter (please note column 7 lines 5-10).

Regarding claim 8 Hudson et al disclose: A computer in accordance with claim 6, said computer further comprising: a conversion table interpolation unit that interpolates the working conversion table selected by said conversion table selection unit to a predetermined accuracy wherein said conversion table output unit outputs the conversion table interpolated by said conversion table interpolation unit (please note column 3 lines 66-67 and column 4 lines 1-21).

Regarding claim 9 Hudson et al disclose: A computer in accordance with claim 6, wherein said conversion table selection unit selects the working conversion table, at

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least based on a combination of a printing resolution of said printing apparatus and a type of printing paper (please note column 6 lines 30-38).

Allowable Subject Matter

7. Claims 5,10-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information

➤ Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Saeid Ebrahimi-Dehkordy* whose telephone number is (703) 306-3487.

The examiner can normally be reached on Monday through Friday from 8:00 a.m. to 5:30 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams, can be reached at (703) 305-4863.

Any response to this action should be mailed to:

Assistant Commissioner for Patents
Washington, D.C. 20231

Or faxed to:

(703) 872-9306, or (703) 308-9052 (for **formal** communications; please mark
"EXPEDITED PROCEDURE")

Or:

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(703) 306-5406 (for *informal* or *draft* communications, please label
"PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Park II, 2121 Crystal
Drive, Arlington, VA., Sixth Floor (Receptionist).

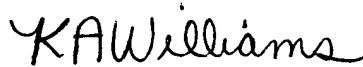
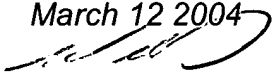
Any inquiry of a general nature or relating to the status of this application should be
directed to the Group Receptionist whose telephone number is (703) 305-4750.

Saeid Ebrahimi-Dehkordy

Patent Examiner

Group Art Unit 2626

March 12 2004



KIMBERLY WILLIAMS
SUPERVISORY PATENT EXAMINER